

REMARKS

Claims 1 through 28 are pending in the instant application. Claims 1, 5, 14, 18, 27 and 28 are the six (6) independent claims. Claims 2 through 4 and 6 through 13 depend from Claim 1. Claims 15 through 17, and 19 through 26 depend from Claim 14.

Applicants express appreciation of the indication of allowable subject matter in Claims 5 and 18. At page 4 of the Action, Claims 5 and 18 are objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants have so amended Claims 5 and 18 to place these claims in independent form. Applicants note that on the cover sheet, the Office has also indicated that Claims 5 and 8, not 18 are objected to and that Claim 18 is rejected. Applicants request clarification as to whether Claim 8 is patentable and state for the file wrapper that Applicants believe that this is a typographical error on the cover sheet PTO form 326, and in fact Claims 5 and 18 are allowable.

In the Action, Claims 1 through 4, 6 through 17, and 19 through 27 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Publication 2003/0048770 to Proctor, *et al.* hereinafter “Proctor.” Applicants note that on page 2 of the Action, the Office points out that Proctor includes a common inventor relative to the instant patent application. This rejection can be overcome either by showing under 37 C.F.R. § 1.132 that the invention is not “by another” under 35 U.S.C. §102(e). Applicants herein reserve the right to file such a 37 C.F.R. § 1.132 declaration in the future to overcome the rejection, but for the purposes of the instant response, Applicants traverse the rejection by stating that commonly owned Proctor simply does not disclose or suggest all of the elements of Claim 1.

By way of background, Proctor discloses an access point which is configured to steer an antenna array in order to receive a wireless signal in a data network. The access point contains a table.

The Office contends that the Medium Access Control layer providing metrics is shown at paragraph 34 of Proctor, where the publication states that:

In addition to standard wireless LAN signaling equipment, the access point 14-1 also contains a table 25 which is capable of storing identification information for the nodes 12 such as a unit identification and an associated antenna setting parameters, such as an angle. An array controller 30 that permits steering of the particular direction of the antenna 20-1 such as by specifying an angle. Signal receiving equipment in the access point 14-1 also contains detection circuits that are capable of determining a received signal metric, such as Received Signal Strength Indication (RSSI), Bit Error Rate (BER), noise power level, or other such measures of receive signal quality. Emphasis supplied.

Proctor simply discloses that the table 25 is capable of storing identification information of nodes in the data network and associated antenna setting parameter information which is used to steer the antenna array to receive signals from the nodes. The access point also contains an array controller which is used to control the antenna array and receiving equipment which is used to determine received signal quality metrics. See Proctor, paragraph 0034. Applicants note that in the cited paragraph, there is simply no mention of the Medium Access Control layer.

In Proctor, a message is received and a check is performed at the data link layer to determine if the originator of the message can be identified. If the originator can be identified, a last known angle that was used to receive a previous message from the originator is looked up in the table and the antenna is steered in the direction specified by this last known angle. The Medium Access Control layer and the data link layer are two different layers and should not be relied upon by the Office as the same.

If the originator cannot be identified in Proctor, the antenna is set in a search mode which steps the antenna through a sequence of directional angles to find a direction in which the signal can be received with the best signal quality metric (*e.g.*, maximum signal strength, best signal quality, lowest bit error rate, etc.). Once this angle is determined, the antenna is steered to this angle and the angle is recorded in the table. See Proctor, paragraphs 0039-0041 and FIG. 3.

Applicants respectfully submit that Proctor does not disclose or suggest any method that includes causing a Medium Access Control (MAC) layer to provide metrics associated with respective beam angles of the directional antenna.

The 802.11 Institute of Electrical and Electronic Engineers (IEEE) standards defines a specification for stations to be moved within a facility and remain connected to a Wireless Local Area Network (WLAN) via Radio Frequency (RF) transmissions to Access Points (AP) connected to a wired network. A physical layer in the stations and access points controls the modulation and signaling format used by the stations and access points to communicate. Above the physical layer is a Medium Access Control (MAC) layer that provides services such as authentication, deauthentication, privacy, association, disassociation, etc. See Applicants' specification at page 1, lines 14 through 20.

According to the IEEE dictionary, the Medium Access Control (MAC) layer is the part of a data station that supports the medium access control functions that reside below the logical link control sublayer. The Medium Access Control (MAC) layer procedures include framing/deframing data units, performing error checking, and acquiring the right to use the underlying physical medium. See *IEEE Standard Dictionary of Electrical and Electronic Terms*, Fourth Edition (1988), IEEE, Inc. 345 East 47 Street, New York, NY 10017. The Medium Access Control (MAC) layer can provide information in packets and is useful in wireless communication in that it can prevent packets from colliding.

In operation of the instant method, when a station comes on-line, the physical layer in the station and access points first establish wireless communication with each other, followed by the MAC layer establishing access to the network via an access point. See Applicants' specification at page 11, lines 10 through 18.

Proctor does not disclose or suggest any MAC layer that provides metrics used to steer a directional antenna. In fact, Proctor, in one non-limiting embodiment, determines setting parameters using detection circuits that appear to imply that the setting parameters are provided at the physical (PHY) layer and not the MAC layer. See Proctor at page 3, paragraph 34.

Applicants contend that the Office is using hindsight reconstruction to simply equate the MAC layer with the look up table 25 or the layer as described in paragraph 34 of Proctor.

Applicants contend that the MAC layer includes unexpected benefits that are not shown, taught or suggested by the reference. At pages 8 through 11 and FIG. 8 of the instant specification as originally filed, Applicants disclose an antenna array, an antenna controller, a PHY layer, a MAC layer and a system management entity (SME). The antenna array receives signals and the PHY layer provides signal-related parameters of the received signals (*e.g.*, received signal strength (RSS), signal quality (SQ), etc.) to the MAC layer.

The MAC layer, then uses the signal-related parameters to generate metrics. These generated metrics are, in turn, communicated to the SME at the MAC layer. The SME uses the generated metrics to direct the antenna controller to steer the antenna array. Note that the metrics are provided at the MAC layer, something that Proctor fails to disclose, and which is advantageous since the Medium Access Control (MAC) layer provides services such as authentication, de-authentication, privacy, association, disassociation, etc. See Applicants' specification at page 1, lines 14 through 20. As discussed above, the Medium Access Control (MAC) layer procedures include framing/deframing data units, performing error checking, and acquiring the right to use the underlying physical medium. The MAC layer may also provide other important functions such as WEP, Scanning, association functions to coordinate communication, request-to send and clear-to-send (RTS/CTS) functions, and optional fragmentation functions that enable an 802.11 station to divide data packets into smaller frames. See Geier, J. *802.11 MAC Layer Defined*, Wi-Fi Planet, June 4, 2002. <http://www.wi-fiplanet.com/tutorials/article.php/1216351>. None of these benefits are shown in the cited reference.

In operation, when a station comes on-line, the physical layer in the station and access points first establish wireless communication with each other, which is then followed by the MAC layer establishing access to the network via an access point. By providing a value at the

MAC layer involves providing a value using a data networking protocol such as, for example, the IEEE 802.11 protocol. See Applicants' specification at page 7, lines 13 through 22.

Providing a value using a data networking protocol typically involves communicating the value using packets and networking stacks which is different than searching a look up table 25 of Proctor. See Proctor, at paragraph 0034.

Proctor further indicates that the table is part of a message routing table. See Proctor, at paragraph 0039. Data networking routing is performed at the network layer (Open Systems Interconnect Reference Model (OSI-RM)).

The MAC layer, on the other hand, is at the data link layer of the Open Systems Interconnect Reference Model which is different than the network layer. Emphasis added.

Thus, even if providing a value from the table 25 of Proctor can be alleged to provide the value using a networking protocol, which it is not, at best, Proctor teaches providing the value at the network layer protocol and not the data link layer.

Applicants submit that Proctor does not disclose or suggest causing a Medium Access Control (MAC) layer to provide metrics as claimed in Claim 1. For this reason, Applicants respectfully submit that Proctor does not anticipate Claim 1, and the Office is using improper hindsight reconstruction to render the claims unpatentable since this element is not shown in the reference.

Claims 2 through 4, and 6 through 13 which depend from Claim 1 are also believed to be patentable for at least the reasons discussed above for Claim 1. Applicants also contend that independent Claims 14 and 27 are patentable for reasons similar to those argued above for Claim 1. Claims 15 through 17 and 19 through 26 depend from Claim 14 and are patentable for at least the same reasons as discussed above for Claim 14. Reconsideration and withdrawal of the above rejections are respectfully requested.

Newly added Claim 28 is also patentable as none of the references disclose or suggest any method with the step of causing a Medium Access Control (MAC) layer to provide metrics associated with respective beam angles of the directional antenna with the Medium Access Control layer accessing metrics from a look up table stored in memory or the Medium Access Control layer calculating metrics and the Medium Access Control layer communicating the metrics to the directional antenna in packets through the Wireless Local Area Network. Emphasis added. Support for the amendment can be found at page 10, lines 3 through 22 of the patent application as originally filed. Allowance of Claim 28 is earnestly solicited.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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